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ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 07/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12/22/99_ .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-27_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-27_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _22 December 1999_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
          application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-27 have been presented for examination. Claims 1-27 have been examined and

rejected.

Information Disclosure Statement

2.   It is noted that the applicants have not provided an Information Disclosure Statement.

Applicant is reminded of their duty to disclose all information material to the patentability of the

application as per 37 CF.R 1.56.

Title

3.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. The title is of generic nature drawn

to a family of systems and not to the applicant's specific invention.

Drawings

4.   This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is allowed.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include

the following reference sign(s) not mentioned in the description: 105, 106. A proposed drawing

correction, corrected drawings, or amendment to the specification to add the reference sign(s) in

the description, are required in reply to the Office action to avoid abandonment of the

application. The objection to the drawings will not be held in abeyance.

        The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

do not include the following reference sign(s) mentioned in the description: Reference 169 Page

13 line 25 and Reference 210 Page 15 line 21. A proposed drawing correction or corrected

drawings are required in reply to the Office action to avoid abandonment of the application. The

objection to the drawings will not be held in abeyance.

The drawings are objected to because in Figure 5, reference 14 is pointing to reference 96

and it is unclear from the description on page 14 line 16 exactly what comprises the **system** as it

is referred to in the specification. A proposed drawing correction or corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The objection to

the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

Claim(s) 1-17 and 19-27 are rejected under 35 U.S.C. 112, first paragraph, as

containing subject matter which was not described in the specification in such a way as to

enable one skilled in the art to which it pertains, or with which it is most nearly connected,

to make and/or use the invention without undue experimentation.

This relates to a lack of substantive detail pertaining to the claimed features.

6.   Claim 1, for example, recites " *A method, comprising: defining a plurality of hardware*

devices as a plurality of objects; ". The specification does not support with enough detail the

method used to define a hardware device as an object and therefore the method is not enabled.

Specifically, the example on page 6, where the applicant discloses, "For example, suppose the

hardware device modeled is a staple gun. A staple gun may push staples into a piece of paper.

Accordingly, an object modeling the staple gun may appropriately include a method,

PushStaples" along with Figure(s) 1,5 and 6 and the disclosed descriptions on page(s) 3,4,5,6 and

7 do not provide enough detail such that one of ordinary skill in the art could make and/or use

the invention, without undue experimentation.

Claim 1, as another example recites, " *providing a plurality of tools to perform a*

plurality of operations on the plurality of objects; ". The specification does not support with

enough detail the method used to develop tools to perform operations on objects and is therefore

not enabled. Specifically the example on page 7, " In Figure3, the tools of the configuration

library **20** may include several functions. The functions may be used by the software program **12**

to communicate with the objects **30**." Along with further disclosures on page(s) 8 and 9 do not

provide enough detail such that one of ordinary skill in the art could make and/or use the

invention, without undue experimentation.

Claim 1, as another example recites, " *executing a software program to use the plurality*

of tools: and responding to the plurality of operations by the plurality of hardware devices. ".

The specification does not support with enough detail the method used to create the software

tools and the software program needed to respond to the hardware devices and is therefore not

enabled. Specifically, the example on page 14 recites, " the RAID software **12a** may perform an

operation to determine the devices which are located on a bus. Looking back to Figure 5,

suppose the RAID software **12a** wants to determine which devices are connected to the SCSI bus

110A of the system **14**. An operation to scan the SCSI bus **110A** …includes invoking the method

invocation function **62** of the configuration library **20** (see Figure 3). In Figure **12**, the method

invocation function **62** is passed two parameters (block **202**). The object **30** for which a method **32** is invoked is provided as a parameter. ... The method **32** to invoke from the passed object is also provided as a parameter." ... from page 15 Accordingly, an integer value is stored in the bus device count memory location once the property is retrieved by the get property function **64**. The scanning operation is thus complete (**block 210**)." Along with disclosures in the figure(s) 5 and 12 are inexact and do not provide sufficient detail such that a one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

7.   Claim 2 recites, " *assigning a plurality of properties to the plurality of hardware devices; and assigning a plurality of methods to the plurality of hardware devices.* " The specification does not support, with sufficient detail, a clear description of how the plurality of properties and plurality of methods are assigned to the plurality of hardware devices and therefore the claim is not enabled. Specifically, the example on Figure 8 along with the description on page's 12 and 13 disclose, " the bus object includes a scan bus method **111** and several properties **34**, including a bus index property **112**, a bus identification property **113**, a bus protocol,..." which does not provide enough detailed disclosure of the specific hardware and how that hardware is modeled in software, such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

8.   Claim3 recites, " *assigning a plurality of events to the plurality of hardware devices.* " The specification does not support with a sufficient level of detail a clear description of how the events are implemented and is therefore not enabled. Specifically, the description on page(s) 6-7 " ...the staple gun may run out of staples. Accordingly, an object modeling the staple gun may appropriately include an event, OutOfStaples." do not clearly define what the event is such that

one of ordinary skill in the art could make and/or use the invention, without undue

experimentation.

9.   Claim 4 recites, " **providing a function for invoking a method of an object; providing**

a function for setting a property of an object; and providing a function for retrieving a

property of an object. " The specification does not support with a sufficient level of detail the

clear definition of these function(s) and is therefore not enabled. For example, the disclosure on

page 8 recites, " the configuration library **20** also provides for manipulating the properties **34** of

the object **30**. A get property function **64** enables the software program **12** to retrieve the

property **34** of the object **30**." As an example, this part of the specification does not clearly and

exactly disclose the method used to implement the get property function such that one of

ordinary skill in the art could make and/or use the invention, without undue experimentation.

10.   Claim 5 recites, " *providing a function for monitoring an event of an object; and*

providing a function for ending monitoring an event of an object. " The specification does not

support with a sufficient level of detail the clear and exact definition of these function(s) and is

therefore not enabled. For example, the specification on page 8 recites, " The configuration

library **20** also provides functions which enable the software program **12** to be notified when an

event to one of the hardware devices **16-18** occurs. A monitor event function **68**, when enabled,

allows the software program **12** to be notified upon the occurrence of the particular event **36** of

object **30**. Likewise, a monitor event off function **70** allows the software program **12** to turn off

monitoring of the particular event **36** of the object **30**." The preceding example shows how the

specification does not clearly and exactly disclose the method for creating these functions such

that one of ordinary skill in the art could make and/or use the invention, without undue

experimentation.

11.   Claim 6 recites, " *An article comprising a medium storing instructions that cause a*

processor-based system to: receive a request from a software program, " The specification does

not support with a sufficient level of detail the clear and exact definition of how the processor

based system receives a request from the software program and therefore is not enabled. For

example on page 3 of the specification, " the software program may include a graphical user

interface which permits a user of the software program to control and monitor hardware

devices." This recitation does not disclose the exact manner that is employed to create the

software program such that one of ordinary skill in the art could make and/or use the invention,

without undue experimentation.

12.   Claim 7 recites, " *processor-based system to use a plurality of configuration library*

tools to act upon a plurality of objects " This specification does not disclose at the level of detail

and clarity required such that the claim is enabled. Specifically, the specification recites, "The

Configuration library **20** further includes a set of functions for object creation and object

discovery." This recitation does not clearly and exactly disclose the manner in which the

configuration library could be made and/or used by one of ordinary skill in the art, without undue

experimentation, and is therefore not enabled.

13.   Claim 8 recites, "*storing instructions that cause a processor based system to invoke a*

plurality of methods of the plurality of objects." The specification does not support with a

sufficient level of detail and in a clear and exact manner how the processor-based system invokes

the methods and the objects disclosed in Claim 8 and is therefore not enabled. As an example

from page 14 line 13, " the RAID software **12a** may perform an operation to determine the devices which are located on a bus" is not clear and detailed enough that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

14.   Claim 9 recites, "...*a processor-based system to retrieve a plurality of properties of the plurality of objects*". The specification does not provide sufficient detail in a clear and exact manner and is therefore not enabled. As an example, the specification discloses on page 13, "the RAID software **12a** may set or retrieve any of the properties or may invoke the scan bus method **111**, as desired." The specification doesn't disclose in sufficient exact detail how the objects properties are retrieved such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

15.   Claim 10 recites, "... *cause a processor-based system to monitor a plurality of events for the plurality of objects*" The specification does not support in sufficient detail the manner in which the system monitors the events and is therefore not enabled. For example on page 13, "...a disk is normal event **161** may permit the RAID software **12a** to be notified when the disk has been marked normal" This example, along with the rest of the specification. does not disclose, with enough detail, how the monitoring of events is accomplished such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

16.   Claim 11 recites, " *A system, comprising: a processor; a plurality of hardware devices; and a medium including a software program which: models a plurality of hardware devices as a plurality of objects, wherein the plurality of objects comprise a plurality of methods and a plurality of properties; provides a plurality of tools for performing a plurality of operations on the plurality of objects; and invokes the plurality of hardware devices to respond to the*

plurality of operations performed on the plurality of objects. "The specification does not

support in sufficient and clear detail the system as disclosed above and is therefore not enabled.

As an example, the section of the specification on page 11 " In Figure **5,** a system **14** …may

include a processor **90** and a memory **92** are coupled to a processor bus **94.**" Along with from

page 12 " From the physical RAID hardware devices **17a** of Figure **5,** a plurality of RAID

objects **30a** may be derived." As well as page 12 the specification recites, "…the bus object **110**

includes a scan bus method **111** and several properties **34,** including a bus indexing property **112,**

a bus identification property **113,** a bus protocol property **114** …". Which does not disclose in a

clear and detailed manner such that one of ordinary skill in the art could make and/or use the

invention, without undue experimentation.

17.   Claim 12 recites " *wherein the software program further models the plurality of*

hardware devices as a plurality of events. " The specification does not support in sufficient and

clear detail the software program as disclosed above and is therefore not enabled. As an

example, from page 13 of the specification, "…a disk is normal event **161** may permit the RAID

software **12a** to be notified when the disk has been marked normal" The monitoring of events by

the software needs to be disclosed in the specification such that one of ordinary skill in the art

could make and/or use the invention, without undue experimentation.

18.   Claim 13 recites " *…the software program further performs operations on the plurality*

of objects by invoking one of the plurality of methods of one of the objects." The specification

does not support in sufficient and clear detail the operations on the plurality of objects as

disclosed above and is therefore not enabled. As an example from page 14, "An operation to scan

the SCSI bus **110A** according to one embodiment of the invention includes invoking the method

invocation function **62** of the configuration library **20** (see Figure **3**)" The details of how the

software program performs operations on the plurality of methods of one of the objects is not

clear and detailed enough such that one of ordinary skill in the art could make and/or use the

invention, without undue experimentation.

19.   Claim 14 recites, " *...the software program further performs operations on the plurality*

of objects by setting one of the plurality of properties of one of the plurality of objects. " The

specification does not support in sufficient and clear detail the operations on the plurality of

objects as disclosed above and is therefore not enabled. As an example, on page 13 ""the RAID

software **12a** may set or retrieve any of the properties or may invoke the scan bus method **111**, as

desired." The details of how the software program sets the properties of one of the objects is not

disclosed such that one of ordinary skill in the art could make and/or use the invention, without

undue experimentation.

20.   Claim 15 recites, " *the software program further performs operations on the plurality*

of objects by monitoring one of the plurality of events of one of the plurality of objects. ". The

specification does not support in sufficient and clear detail the method used to monitor the events

of one of the objects and is therefore not enabled. As an example, on page 8 "The configuration

library **20** also provides functions which enable the software program **12** to be notified when an

event to one of the hardware devices **16-18** occurs. A monitor event function **68**, when enabled,

allows the software program **12** to be notified upon the occurrence of the particular event **36** of

object **30**. Likewise, a monitor event off function **70** allows the software program **12** to turn off

monitoring of the particular event **36** of the object **30**." Which does not show the method for

monitoring the events of the object such that one of ordinary skill in the art would be able to

make and/or use the invention, without undue experimentation.

21.   Claim 16 recites, "*A system comprising: a processor; a plurality of disks; and a*

memory storing software which: models the plurality of disks as a plurality of disk objects;

provides a plurality of tools for performing a plurality of operations on the plurality of disk

objects; and invokes a response by the plurality of disks to the plurality of operations

performed on the plurality of disk objects. " The specification does not support in clear detail

the method for the plurality of tools to perform a plurality of operations on a plurality of disk

objects and is therefore not enabled. As an example, on page 11 of the disclosure, "In Figure **5**, a

system **14** ...may include a processor **90** and a memory **92** are coupled to a processor bus **94**."

Along with from page 12 " From the physical RAID hardware devices **17a** of Figure **5**, a

plurality of RAID objects **30a** may be derived" further on page 12, " Likewise, the controller

object **100** includes properties **34**, such as a bus counting method **103**, used to report the number

of buses on the controller, and a disk counting method **104**, for reporting the number of disks on

the controller. " This example, along with the rest of the specification, do not show enough detail

such that a person of ordinary skill in the art could make and/or use the invention, without undue

experimentation.

22.   Claim 17 recites, "*The system of claim 16, wherein the software program is stored in*

memory." Which does not support in clear detail how the software program is stored in memory

and is therefore not enabled. The examiner found no description in the specification whereby the

software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention without undue experimentation.

23.   Claim 19 recites, *"The system of claim 18, further comprising a memory storing software which..."* which does not support in clear detail how the software program is stored in memory and is therefore not enabled. The examiner found no description in the specification whereby the software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention, without undue experimentation.

24.   Claim 20 recites, *"The system of claim 19, further comprising a memory storing software which..."* which does not support in clear detail how the software program is stored in memory and is therefore not enabled. The examiner found no description in the specification whereby the software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention, without undue experimentation.

25.   Claim 21 recites, *"The system of claim 20, further comprising a memory storing software which invokes a response to the plurality of operations by: the plurality of buses for operations performed on the plurality of bus objects; and the plurality of controllers for operations performed on the plurality of controller objects"* The specification does not support in clear detail how the software program is stored in memory and the specification does not disclose in a clear and detailed manner how the software invokes a response to a plurality of operations on the bus objects or the controller objects and is therefore not enabled. As an example on page 12 of the specification, " ...the controller object **100** includes properties **34**, such as a bus counting method **103**, used to report the number of buses on the controller, and a

disk counting method **104**, for reporting the number of disks on the controller." Which does not

disclose in a clear and detailed manner how the software invokes a response to operations on the

controller and bus objects such that one of ordinary skill in the art could make and/or use the

invention, without undue experimentation.

26.   Claim 22 recites, *"An object comprising: a plurality of methods to model operations*

performed upon a device; a plurality of properties to model attributes of the device; and a

plurality of events to model actions of the device." The specification does not disclose in a clear

and detailed manner how the plurality of methods models operations, how the plurality of

properties model the attribute of the device and how the plurality of events models the actions of

the device and therefore is not enabled. As an example on page 5 of the specification, "The

objects **30**, in essence, define the hardware devices **16-18** by modeling the operations (or

methods), the attributes (or properties), and the actions (or events) of each hardware device **16-**

18. An operation, known as a method, may be invoked upon an object." Which does not disclose

in a clear and detailed manner the methods, properties, and events of the device objects such that

one of ordinary skill in the art could make and/or use the invention, without undue

experimentation.

27.   Claim 23 recites, "...*wherein the methods comprise parameters of the object."* The

specification does not disclose with clear detail how the methods comprise the parameters of the

object and therefore is not enabled. As an example, on page 8 of the specification discloses,

"The method **32** may include parameters which may be set prior to invoking the method **32** or

may be returned upon executing the method **32**." The specification does not disclose in a clear

and detailed manner what the parameters are such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

28.   Claim 24 recites, "*The object of claim 23, wherein the parameters comprise properties of the object.*" The specification does not show in a clear and detailed manner how the parameters comprise the properties of the object and therefore is not enabled. As an example, on page 8 of the specification, "In one embodiment of the invention, the parameters may include properties **34** of the object **30** for which the method **32** is invoked." which does not show in a clear and detailed manner how the parameters may include the properties of the object such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

29.   Claim 25 recites, "*A system, comprising: an interface, comprising: a plurality of functions; and a plurality of objects coupled to the plurality of functions and a plurality of devices coupled to the interface, wherein a software program may control the plurality of devices by communicating with the interface.*" The specification does not disclose in a clear and detailed manner how the software program may control the system, functions and objects coupled to functions, and devices coupled to an interface such that the software program may control the devices via the interface and is therefore not enabled. As an example of page 11 of the specification, "In Figure **5**, a system **14** …may include a processor **90** and a memory **92** are coupled to a processor bus **94**." Along with from page 12 " From the physical RAID hardware devices **17a** of Figure **5**, a plurality of RAID objects **30a** may be derived" further on page 12, " Likewise, the controller object **100** includes properties **34**, such as a bus counting method **103**,

used to report the number of buses on the controller, and a disk counting method **104,** for

reporting the number of disks on the controller." And including from page 14 "...the RAID

software **12a** may perform a number of operations on the RAID hardware devices **17a.** Simply

by controlling the properties **34** and methods **32** of the RAID objects **30a,** the RADI software

12a can configure the RADI hardware devices **17a.**" which does not disclose the detail required

for one of ordinary skill in the art to make and/or use the invention, without undue

experimentation.

30.   Claim 26 recites, "...*the plurality of functions further comprises a function for*

retrieving a property of one of the plurality of objects." The specification does not disclose in a

clear and detailed manner how the function can retrieve the property from the object and is

therefore not enabled. An example from page 12,"Each of the properties **34** is accessible to the

RAID software **12a** for communicating with the controller of the RAID hardware devices **17a.**"

which does not disclose in a clear and detailed manner how the software retrieves properties

from the one of the plurality of objects such that one of ordinary skill in the art could make

and/or use the invention, without undue experimentation.

31.   Claim 27 recites, "...*the function for retrieving a property of one of the plurality of*

functions further comprises: a parameter to identify the object for which the property is

retrieved; a parameter to identify the property to be retrieved; and a parameter for storing a

result." The specification does not disclose in a clear and detailed manner a parameter to identify

the object, a parameter to identify the property, a parameter for storing a result and is therefore

not enabled. As an example page 8 of the specification recites, "The method 32 may include

parameters which may be set prior to invoking the method **32** or may be returned upon executing

the method **32**." And on page 9 "API **10** provides the capability to invoke the methods **32**, set

and retrieve the properties, **34**, and monitor the events **36** for a given object **30**." which does not

disclose in a clear and detailed manner how a function for retrieving a property of one of the

plurality of functions comprises: a parameter to identify the object for storing a result such that

one of ordinary skill in the art could make and/or use the invention, without undue

experimentation.

Claim Interpretation and Definitons:

32.   The examiner has given the broadest reasonable interpretation to the Applicant's claim

language. As such, the examiner is providing a number of terms as defined in the art and used to

interpret Applicant's claim language. Examiner is interpreting the following terms in light of the

Applicant's specification and well known definitions of the prior art teachings. An Applicant can

be his/her own lexicographer, however, if a phrase or term has a standard meaning the

Applicant's definition can not be repugnant to the well known definition. Examiner has used

standard definitions to provide a basis for the relevance of specific rejected limitations in view of

prior art known made of record.

PROPERTY: *(noun)* **1.** any encapsulated static aspect (i.e. attribute, link, component part,

exception, invariant) that characterizes an object, class, extent, or type. **Attribute**: *(noun)* a data

item associated with class instances. Dictionary of object technology : the definitive desk

reference/ Donald G. Firesmith and Edward M. Eykholt., SIG Books Inc. NewYork, New York,

1995. ISBN 1-884842-09-7 See also *Savitzky et al.*U.S. Patent Number 5,732,261 **Col. 1 Lines**

23-57, The examiner puts forth that in the applicants specification the term "property" is being

used instead of the term "attribute" and that the term "attribute" would provide greater clarity in

disclosing the Applicant's invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

33.   While applicant may be his or her own lexicographer, a term in a claim may not be given

a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73

USPQ 482 (CCPA 1947). The term "property" in claim(s) 4, 26 and 27 is used by the claim(s)

to mean "attribute," while the accepted meaning is " a data item associated with class instances."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

34.   The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) do not apply to the examination of this application as the application being examined

was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment

by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

35.   **Claim(s) 1,2 and 25-27 are being rejected under 35 U.S.C. 102(e) as being clearly**

anticipated by Savitzky et al. "METHOD OF USING OBJECT-ORIENTED

COMMUNICATION SYSTEM WITH SUPPORT FOR MULTIPLE REMOTE

MACHINE TYPES" U.S. Patent 5,732,261. *Savitzky et al.* Discloses, Taking claim 1, for

example: A method, comprising: defining a plurality of hardware devices as a plurality of

objects, From **Col. 2 Lines 66 & 67**, "the first plurality of software objects describing services

for one of the plurality of remote machines" *Savitzky et al* discloses, providing a plurality of

tools to perform a plurality of operations on the plurality of objects, From *Savitzky et al* **Col 2**

Lines 55 & 56, The preset invention relates generally to the area of service tools for remote

machines. *Savitzky et al* discloses, executing a software program to use the plurality of tools; and

responding to the plurality of operations by the plurality of hardware devices. From *Savitzky et al*

Col. 2 Lines 18 to 23, To access a remote machine, the remote service application uses a "device

driver" associated with some interface device such as a modem, and a "protocol driver" that

formats the data sent to and received from the remote machine. These drivers may be part of the

operating system or may be modules within the application program.

With respect to Claim 2 the *Savitzky et al* reference discloses defining the plurality of

hardware devices as a plurality of objects further comprises: assigning a plurality of properties

to the plurality of hardware devices; and assigning a plurality of methods to the plurality of

hardware devices. From *Savitzky et al* **Col. 1, Lines 26 to 35.** As is understood to one skilled in

the art. an "object" is an abstraction of a real world entity and is implemented as a combination

of a data structure (whose fields are called "attributes" or "data members") and a set of

operations ("methods" or "member functions") that can be performed on it. A class" is a data

type for a set of objects that each have the same data structure and the same operations. An

instance" of a class is an object, the data type of which is the class as actually embodied in the

memory of a running application program. As recited for claims 25-27; *Savitzky et al.* discloses:

A system, comprising: an interface, comprising: a plurality of functions; and a plurality of

objects coupled to the plurality of functions; and a plurality of devices coupled to the interface,

wherein a software program may control the plurality of devices by communicating with the

interface and wherein the plurality of functions further comprises a function for retrieving a

property of one of the plurality of objects, and wherein the function for retrieving a property of

one of the plurality of functions further comprises: a parameter to identify the object for which

the property is retrieved; a parameter to identify the property to be retrieved; and a parameter for

storing a result. As an example *Savitzky et al.* Discloses, **Col. 1 Lines 17-22** "The present

invention relates generally to the area of service tools for remote machines. More specifically,

the present invention relates to communication between service application programs in

computer systems, and remote devices such as remote machines and external data in files,

databases, and programs. " As another example *Savitzky et al.* Discloses, **Col. 1 Lines 24-35** "An

understanding of object oriented programming and object-oriented application frameworks will

assist in full understanding of the present invention. As is understood to one skilled in the art, an

"object" is an abstraction of a real world entity and is implemented as a combination of a data

structure (whose fields are called "attributes" or "data members") and a set of operations

("methods" or "member functions") that can be performed on it. A "class" is a data type for a set

of objects that each have the same data structure and the same operations. An "instance" of a class is an object, the data type of which is the class, as actually embodied in the memory of a running application program. "

36.   Claim(s) 6 - 15 and 22-24 are being rejected under 35 U.S.C. 102(e) as being clearly anticipated by *Brumlet et al.* U.S. Patent 5,926,775. *Brumlet et al.* discloses, as recited from claims 6-10; "An article comprising a medium storing instructions that cause a processor-based system to: receive a request from a software program; act upon a plurality of objects based upon the request received; and manipulate a plurality of hardware devices modeled by the plurality of objects." **Figure(s) 2 thru 17 and Col. 27 Lines 6 thru 33**, In regards to Claim 7 **Col. 4 Lines 18-24.** *Brumlet et al.* Recites, "A driver family interpreter executes on top of the mini-driver primitives. The interpreter operates to configure device family independent or hardware independent features for each device. The interpreter can also operate to convert from a legacy user interface to the low level programming interface provided by the respective mini-driver primitives." As recited from claims 11-15, *Brumlet et al.* discloses: A system comprising: a processor; **Col. 6 Lines 44 thru 49.** a plurality of hardware devices, **Col. 7 Lines 7 thru 13.** a medium including a software program which: models the plurality of hardware devices as a plurality of objects, wherein the plurality of objects comprise a plurality of methods and a plurality of properties; **Figure(s) 2,3,4,7,11,12,13 and Col. 3 Lines 21-28** "The DAQ driver level software also includes a plurality of mini-driver primitives. Each of the mini-driver primitives performs a portion of controlling the DAQ device. In other words, the DAQ device includes a plurality of hardware resources for performing DAQ functions, and each of the plurality of mini-driver primitives controls one of the hardware resources." and *Brumlet et al.*

Recites, **Col. 13 Lines 26-30** "Primitives have a set of attributes, which themselves have

values. Primitives also support a set of control codes, which are used in conjunction with the

Control method on a primitive."

With respect to Claim 15 . The *Brumley et al.* reference discloses in **Col. 12 Lines 46-49.**

"The Message Manager handles messaging to the user application in response to events or

interrupts."

Furthermore, *Brumley et al.* discloses: An object comprising: a plurality of methods to

model operations performed upon a device; a plurality of properties to model attributes of the

device; and a plurality of events to model actions of the device, wherein the methods comprise

parameters of the object and wherein the parameters comprise properties of the object. *Brumley*

et al. Recites **Figure(s) 2 & 3** and **Col. 23 Lines 61-64** "Once reserved, Get(attrID, attrVal) and

Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current

programmable attributes" As regards to *"Events"* **Col. 12 Lines 46-49.** "The Message Manager

handles messaging to the user application in response to events or interrupts."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

37. **Claim(s) 3, 4 and 5** are being rejected under 35 U.S.C. 103(a) as being unpatentable over

Savitzky et al. in view of **Brumley et al. U.S. Patent 5,926,775** As noted above *Savitzky et al.*

discloses A method, comprising: defining a plurality of hardware devices as a plurality of

objects: Providing a plurality of tools to perform a plurality of operations on the plurality of

objects; Executing a software program to use the plurality of tools and responding to the

plurality of operations by the plurality of hardware devices; assigning a plurality of properties to

the plurality of hardware devices; and assigning a plurality of methods to the plurality of

hardware devices. However the *Savitzky et al.* does not expressly disclose assigning a plurality

of events to the plurality of hardware devices. The *Brumley et al.* reference discloses in **Col. 12**

Lines 46-49. "The Message Manager handles messaging to the user application in response to

events or interrupts." It would have been obvious to one of ordinary skill in the art at the time

the invention was made to modify *Savitzky et al.* with *Brumley et al.* and assign a plurality of

events to the plurality of hardware devices because the mechanism of reporting driver status via

event handling is very efficient as opposed to other methods of obtaining current status.

With respect to Claim 4 *Brumley et al.* doesn't expressly disclose a function for invoking

a method of an object. However, *Savitzky et al.* recites, **Col. 16, Lines 28-31,** "if the SI.sub.--

AppItem is marked "busy" a callback method is invoked when the work is actually done." It

would have been obvious to one of ordinary skill in the art at the time the invention was made

to modify *Savitzky et al.* with *Brumley et al.* to provide a function for invoking a method of an

object because otherwise the object could not be used.

With respect to Claim 4 both *Brumley et al.* and *Savitzky et al* teach a function for setting

a property of an object and a function for retrieving a property of an object. For example

Savitzky et al. recites, **Col. 4 Lines 60-63.** "If there is a member function that updates a value,

its name ends in "Set"; the update function is declared by the same macro that declares the

attribute." Also *Brumley et al.* recites **Col. 23 Lines 61-64.** Once reserved, Get(attrID, attrVal)

and Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current

programmable attributes. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify *Savitzky et al* with *Brumley et al.* to provide function(s)

for setting and retrieving a property of an object because that is the manner in which attributes

are accessed and modified in object oriented programming.

38. **Claim(s) 16 - 21** are being rejected under 35 U.S.C. 103(a) as being unpatentable over

Brumley et al. U.S. Patent 5,926,775 in view of **Morris et al. U.S. Patent 5,877,966** *Brumley*

et al. discloses A system, comprising: a processor; a plurality of disks; and memory storing

software. Also *Brumley et al.* recites **Col. 23 Lines 61-64.** Once reserved, Get(attrID, attrVal)

and Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current

programmable attributes. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to provide function(s) for setting and retrieving a property of an

object. Which can be restated to being, "plurality of tools for performing a plurality of

operations on "some type" of object(s)". *Brumley et al.* teaches multiple buses and multiple

controllers. **Figure 1, Figure 1A.** and further teaches multiple bus objects and multiple

controller objects. **Figure(s) 11,12 and 13.**

However, *Brumley et al.* does not expressly disclose is: models the plurality of disks as a

plurality of disk objects. *Morris et al.* teaches, **Figure 2 and Col. 5 Lines 54 – 57.** "These

constituent parts are, in turn, members of a "class" of objects having similar features. For

example, the 300 MB <u>SCSI</u> Hard Disk part 58 is a member of the class "300 MD <u>SCSI</u> Hard

Disk" 66. Class 66 is, in turn, a subclass of class "Generic Hard Disk" 72, as are subclasses 64,

68 and 70." *Morris et la.* also teaches a plurality of volumes and a plurality of arrays. **Col. 5**

Lines 29-39. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify *Brumley* with *Morris* in order to represent disk drives as a plurality of disk objects and be able to perform a plurality of operations on said disk objects, since the objective is to model the computer system along with its data storage sub-systems using an object oriented paradigm.
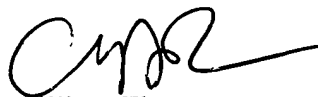
Conclusion

39.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Dwin M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on M-F between the hours of 9:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

DMC
June 27, 2002

William Thomson
Patent Examiner

AU 2123

June 25, 2002